



SPP2319

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP2319 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching , and low in-line power loss are needed in a very small outline surface mount package.

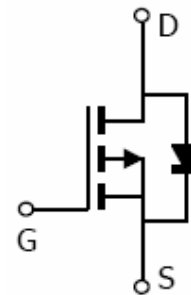
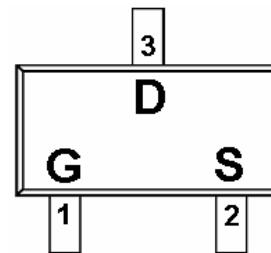
APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

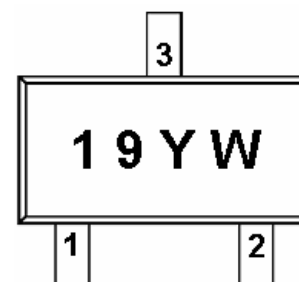
FEATURES

- ◆ $-40V/-3.0A, R_{DS(ON)} = 96m\Omega @ V_{GS} = -10V$
- ◆ $-40V/-2.8A, R_{DS(ON)} = 110m\Omega @ V_{GS} = -4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-3L package design

PIN CONFIGURATION (SOT-23-3L)



PART MARKING



Y : Year Code
W : Week Code



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PIN DESCRIPTION

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1 | G | Gate |
| 2 | S | Source |
| 3 | D | Drain |

ORDERING INFORMATION

| Part Number | Package | Part Marking |
|---------------|-----------|--------------|
| SPP2319S23RGB | SOT-23-3L | 19YW |

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)

※ SPP2319S23RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

| Parameter | Symbol | Typical | Unit |
|---|------------------|---------|------|
| Drain-Source Voltage | V _{DSS} | -40 | V |
| Gate –Source Voltage | V _{GSS} | ±20 | V |
| Continuous Drain Current(T _J =150°C) | I _D | -3.5 | A |
| | | -2.8 | |
| Pulsed Drain Current | I _{DM} | -20 | A |
| Continuous Source Current(Diode Conduction) | I _S | -1.4 | A |
| Power Dissipation | P _D | 1.25 | W |
| | | 0.81 | |
| Operating Junction Temperature | T _J | -55/150 | °C |
| Storage Temperature Range | T _{STG} | -55/150 | °C |
| Thermal Resistance-Junction to Ambient | R _{θJA} | 105 | °C/W |



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

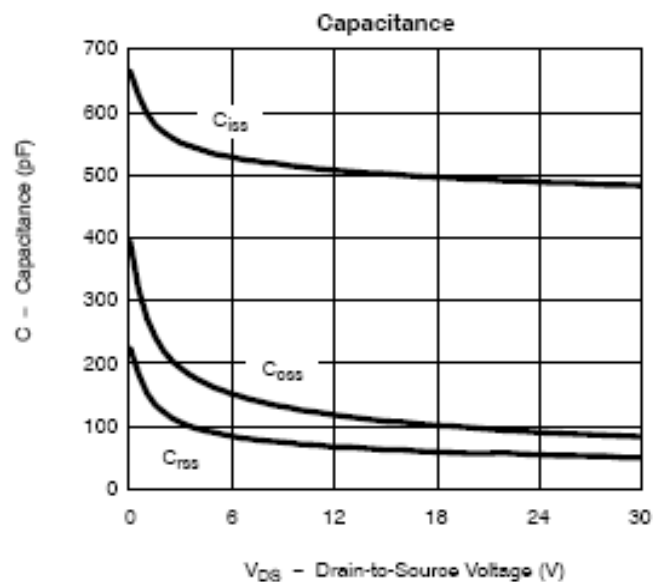
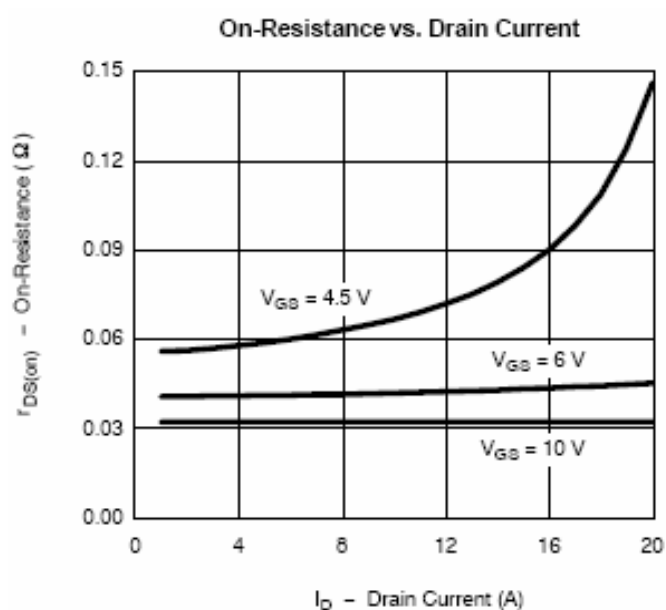
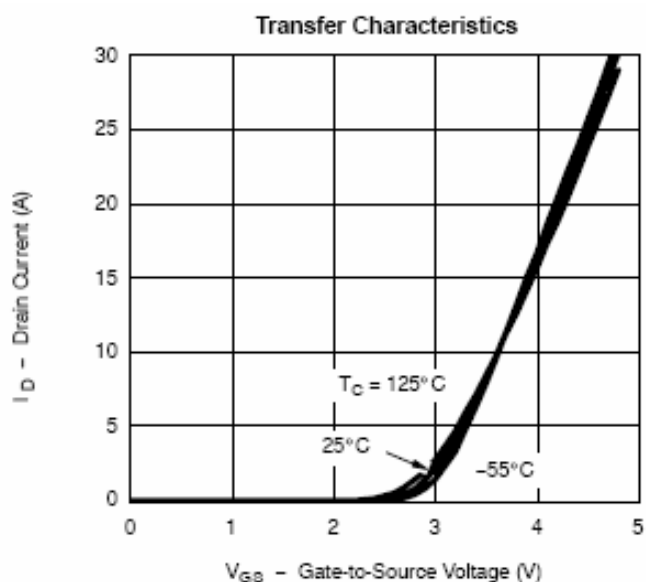
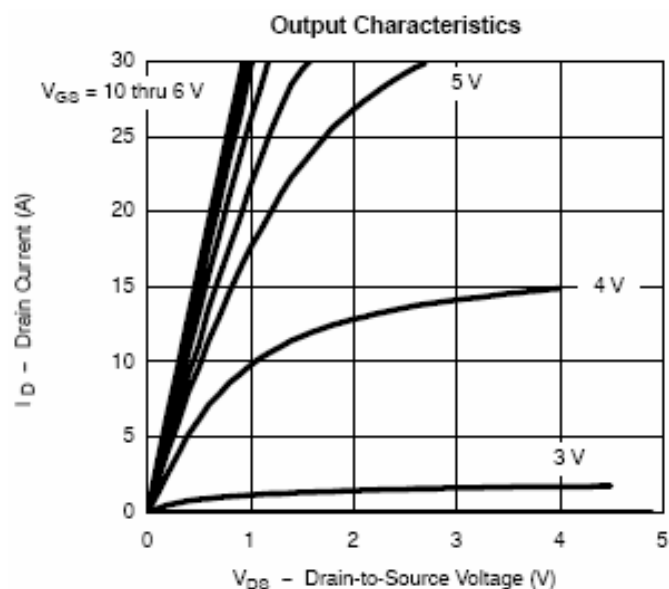
| Parameter | Symbol | Conditions | Min. | Typ | Max. | Unit |
|---------------------------------|----------------------|---|------|-------|-------|------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =-250uA | -40 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250uA | -0.8 | | -2.5 | |
| Gate Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =-36V, V _{GS} =0V | | | -1 | uA |
| | | V _{DS} =-36V, V _{GS} =0V T _J =85°C | | | -5 | |
| On-State Drain Current | I _{D(on)} | V _{DS} = -5V, V _{GS} =-4.5V | -10 | | | A |
| Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =-10V, I _D =-3.0A | | 0.090 | 0.096 | Ω |
| | | V _{GS} =-4.5V, I _D =-2.8A | | 0.100 | 0.110 | |
| Forward Transconductance | g _{fs} | V _{DS} =-15V, I _D =-3.0A | | 13 | | S |
| Diode Forward Voltage | V _{SD} | I _S =-1.3A, V _{GS} =0V | | -0.55 | -1.0 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q _g | V _{DS} =-15V, V _{GS} =-10V I _D = -3.0A | | 9 | 12 | nC |
| Gate-Source Charge | Q _{gs} | | | 1.5 | | |
| Gate-Drain Charge | Q _{gd} | | | 2.0 | | |
| Input Capacitance | C _{iss} | V _{DS} =-15V, V _{GS} =0V f=1MHz | | 500 | | pF |
| Output Capacitance | C _{oss} | | | 95 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 50 | | |
| Turn-On Time | t _{d(on)} | V _{DD} =-15V, R _L =15Ω I _D =-1.0A, V _{GEN} =-10V R _G =6Ω | | 8 | 20 | nS |
| | t _r | | | 10 | 20 | |
| Turn-Off Time | t _{d(off)} | | | 30 | 35 | |
| | t _f | | | 15 | 20 | |



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TYPICAL CHARACTERISTICS

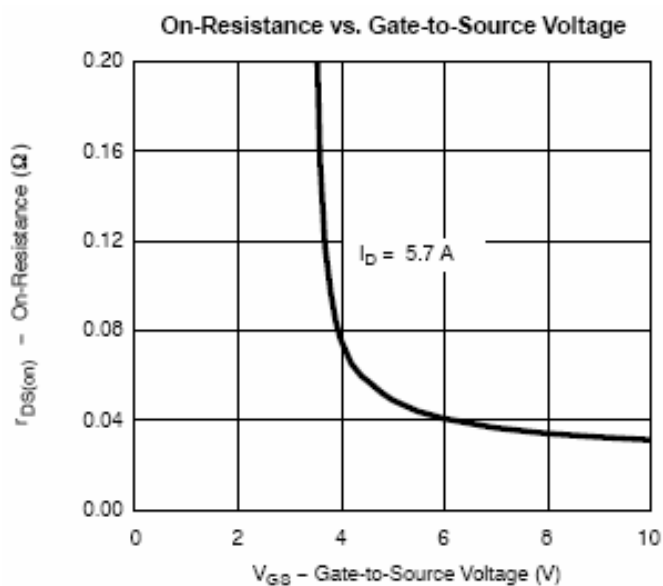
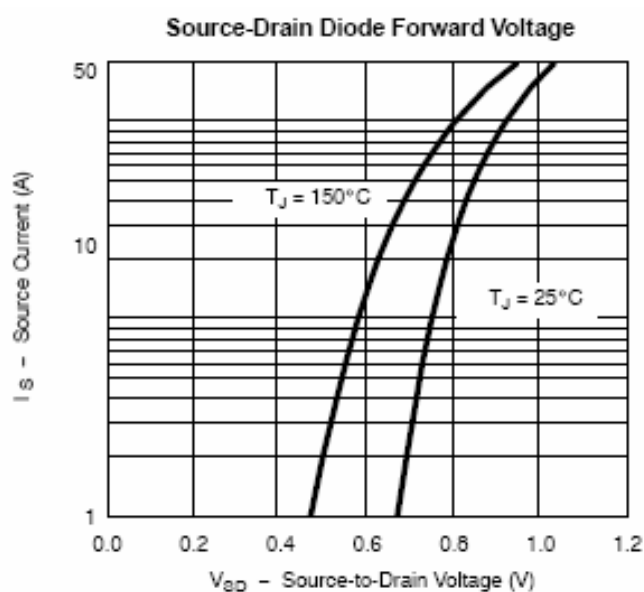
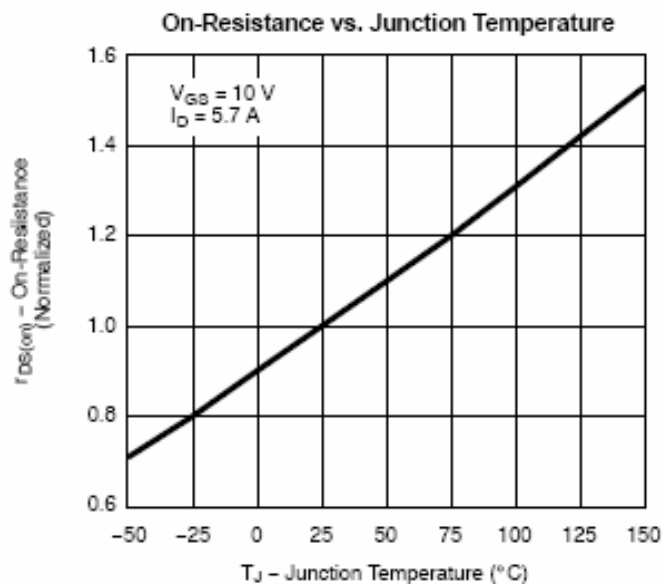
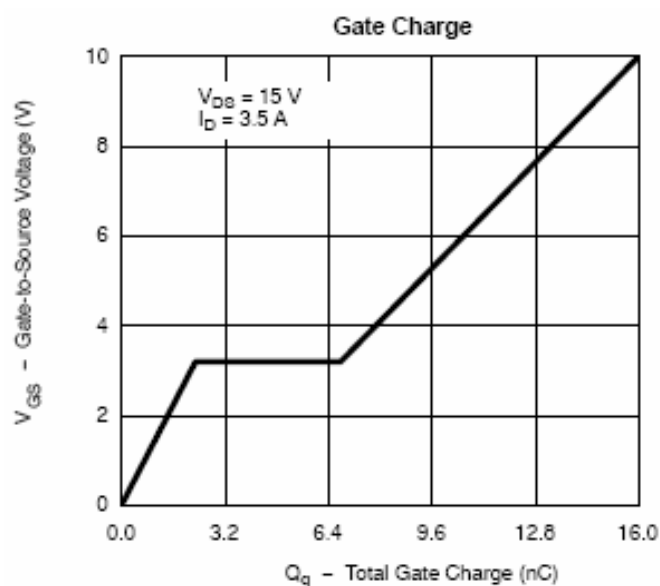




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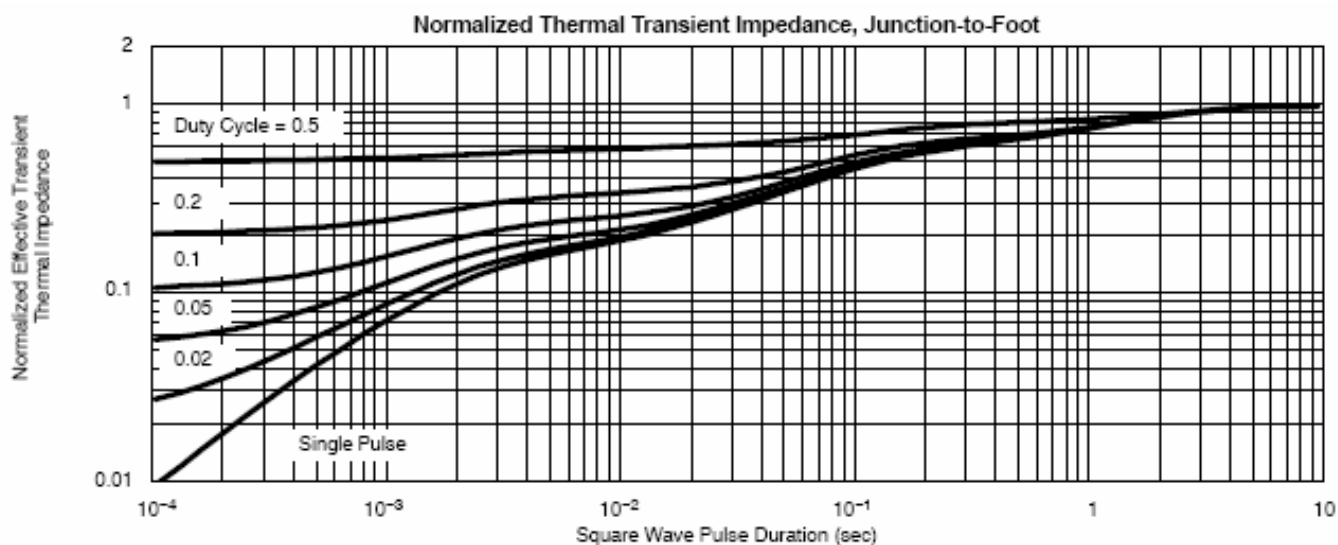
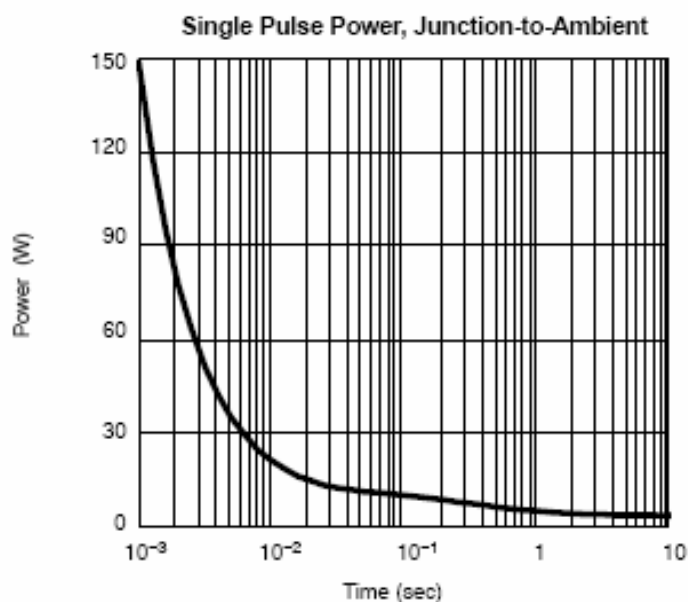
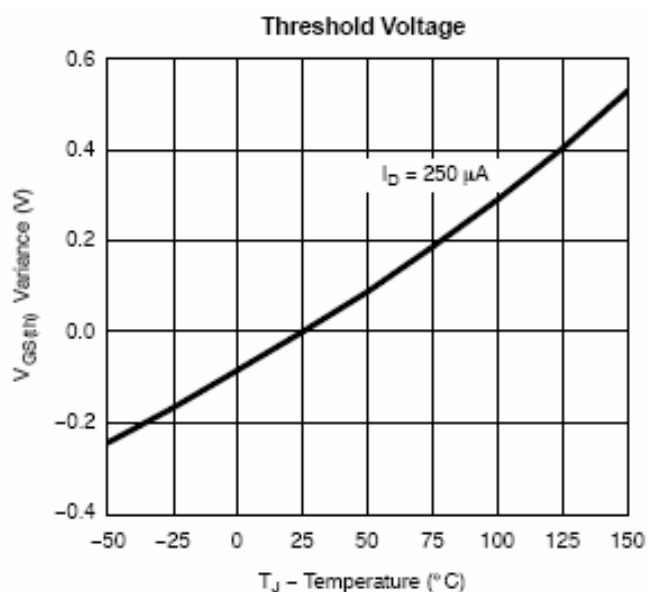




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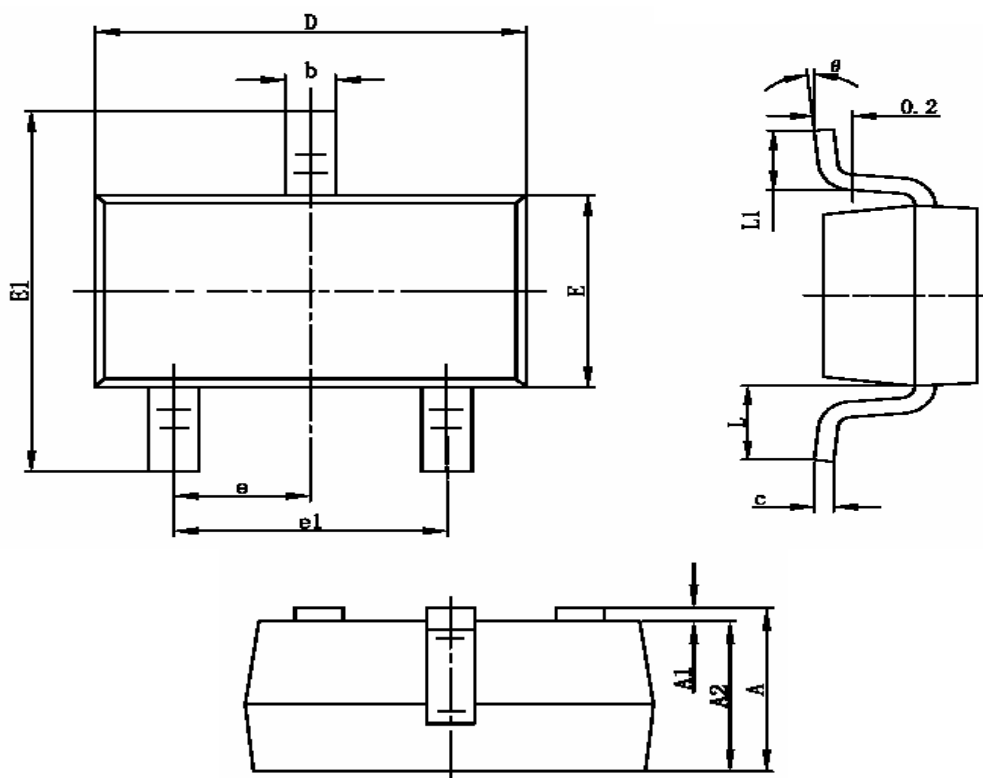




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SOT-23-3L PACKAGE OUTLINE



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.400 | 0.012 | 0.016 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950TYP | | 0.037TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.700REF | | 0.028REF | |
| L1 | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |



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